Building a Digital Society to Enhance the Efficiency of National Governance in Vietnam

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Abstract

The Fourth Industrial Revolution, especially the digital technology, has been rapidly transforming all aspects of social life, driving a powerful process of digital transformation across all fields. The digital transformation program in Vietnam identifies the digital society as one of the three fundamental pillars, encompassing changes in the way social interactions and connections shift from traditional methods to digital connections through modern technology and communication infrastructure. Alongside the numerous positive aspects, the process of building a digital society also presents significant challenges for each country in managing issues related to ensuring digital citizen rights, establishing digital lifestyle standards, and ensuring fairness in digital commerce. In this study, we will: (1) Clarify the concept and characteristics of the digital society; (2) Explore the current status of building a digital society in Vietnam; (3) Analyze some barriers to the digital society construction; (4) Propose some recommendations for enhancing the effectiveness of national governance in Vietnam today.

Keywords: *digital society, digital citizen rights, digital lifestyle, digital commerce, national governance*

1. Introduction

The digital society has been the subject of numerous studies, and several research articles shed light on various aspects of this emerging phenomenon. Dufva, T., & Dufva, M. in "Grasping the future of the digital society" reveal that society is increasingly digitalized and connected, with computers and algorithms playing a significant role in daily activities. The authors introduce 'digi-grasping' to analyze awareness and involvement in the digital world, suggesting it fosters an ethical and aesthetic attachment to society [1]. Powell, A. (Ed) in "Digital criminology: Crime and justice in digital society" presents the concept of the 'digital society,' recognizing technology as an integral part of the larger social entity. The article explores the potential for interdisciplinary advancements in 'digital criminology' and its impact on innovative crime and justice scholarship [2]. Van Dijck, J. in "Governing digital societies: Private platforms, public values" shows how online digital platforms deeply penetrate society, disrupting markets, labor relations, and institutions, while transforming social and civic practices. Platform dynamics affect democratic processes and political communication, leading to intense struggles between competing ideological systems [3]. Martynov, V. V. (Ed) in "Information Technology as the Basis for Transformation into a Digital Society and Industry 5.0" discusses the state and prospects of technology development during the transition from industry 4.0 to industry 5.0. The authors analyze modern technologies vital for organizing the digital industry, ensuring a smooth transition [4]. Lahlou, S. in "Identity, social status, privacy and face-keeping in digital society" explores the privacy concerns raised by the digitization of society, describing privacy threats of life-logging. The article proposes a new definition of privacy as 'keeping face,' providing constructive guidelines for enhancing privacy in system design [5]. Egard, H., & Hansson, K. in "The digital society comes sneaking in. An emerging field and its disabling barriers" highlight how rapid digital technology growth affects disabled individuals' everyday experiences of social exclusion. The article discusses the relationships between theories on society changes with new technologies, leading to potential disabling barriers for the disabled [6]. Ivanova, V. in the report "Digital skills – a prerequisite for the development of a digital society" analyzes the Digital Economy and Society Index (DESI) elements, studying digital technology access and use in Bulgaria and other European countries. The report draws conclusions on the relationship between digital skills and societal development [7]. Lindgren, S. in "Digital Media and Society" approaches digital society as an equation: Digital society = Digital media + Society, discussing the influence of digitized communication tools and infrastructure on society. The book covers various topics, from social media to digital ethics [8]. Selwyn, N. in "What is Digital Sociology?" conceptualizes digital society as a stage of social development driven by technology, AI, and utility equipment systems. The book explores key topics like digital race, labor, evolving research methods, and diverse digital scholarship forms [8]. Perriam, J., & Carter, S. in "Understanding Digital Societies" provide a framework for comprehending our technologically shaped society, exploring relationships between humans, machines, and emerging AI technologies. The book delves into thought-provoking contemporary issues related to technology use in local and global communities [9].

In Vietnam, there haven't been many research works on the digital society, primarily focusing on analyzing the digital society as a component of digital transformation. Nguyen Huu Hoang and Tran Van Huan analyzed the challenges posed to leadership and management in the digital society. In their analysis, the authors assert that "The digital society has brought about rapid and profound changes in the hierarchy of values, cultural and social standards; many unprecedented methods of social interaction and communication, such as
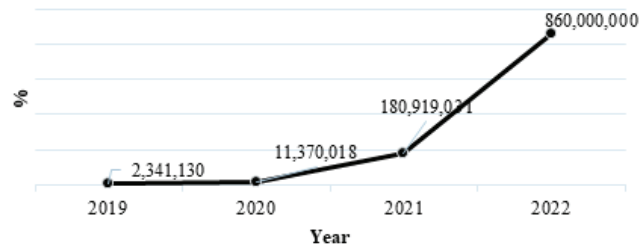
Fig. 1. Number of transactions on the NDXP platform [16]

virtual interactions, have emerged. This has made social interactions and cohesion in many settings become more "loose" and even at risk of disruption." Additionally, the authors also prove the point that "human resources are the core issue in the digital society" and propose solutions to build a policy and legal space (sandbox) to actualize the digital society [26]. In the book "Digital Society - Understanding the Digital Society" by Nguyen Duc Loc, author analyze the digital society in Vietnam from a technical perspective. The author also addresses social arrangements, the role of humans in the age of intelligent machines, and policies related to digital urban infrastructure [27]. Bui Quang Tuan and Ha Huy Ngoc Sach (2022) provide an overview of digital transformation and international experiences related to digital transformation in the book "Digital Transformation - International Experiences and Roadmap for Vietnam". They dedicate Chapter 5 to analyzing the process of transitioning to the digital society in Vietnam, highlighting the perspective of approaching the digital society as an integral part of Vietnam's digital transformation process [28].

Thus, through the analysis of some typical scientific studies related to digital society, it can be seen that the authors have conceptions and analysis of many detail aspects of digital society such as: Crime and justice in digital society; Governing digital societies; Information Technology; Identity, social status, privacy and face-keeping in digital society; Digital skills; Digital Media; Relationships between humans, machines and technologies. However, until now, there have been no studies on the barriers to the process of building a digital society, nor have there been any studies that place the digital society in relation to effective national governance. In this research, we will conduct a specific case study in Vietnam regarding the construction of the digital society. We will approach the theory of the digital society through three structures: digital citizen rights, digital lifestyle, and digital commerce. Based on this foundation, we will analyze and evaluate the current situation and the barriers present in the process of building the digital society. From there, we will propose some solutions for constructing a digital society to enhance the effectiveness of national governance.

2. Perspectives on the Digital Society

From a technological perspective, in the special report "Digital Society in Asia" by the Global System for Mobile Communications (GSMA), the concept of "Digital Society" is defined as follows: The digital society refers to a society where citizens seamlessly interact with various aspects of life, including work, entertainment, and communication, through digital channels via interconnected smart devices and compatible

services. In a digital society, people can access and interact with a range of public and private services, including financial services, utilities, education, healthcare, and transportation, anytime and anywhere, using digital technology [10].

From a scientific perspective, scholars worldwide perceive the digital society as a contemporary social structure and lifestyle strongly influenced and shaped by digital technologies, especially the internet and digital communication. It encompasses a wide range of interactions, behaviors, relationships, and diverse activities that individuals and communities engage in the digital realm. In the digital society, people use digital technologies and online platforms for various purposes, such as communication, socialization, information sharing, entertainment, education, commerce, etc. The widespread use of smartphones, computers, and internet connectivity has transformed the way individuals interact, access information, and participate in the global community [11].

From a management perspective, Vietnamese scientists have their own view of the digital society: The digital society represents a new state of transformation and development of society based fundamentally and significantly on digital technologies and digital communication such as the internet, AI, Big Data, Mobile Technology, etc., enabling the seamless interaction of all members of society with each other and with objects (Internet of Things - IoT) in various aspects of social life, including the economy, politics, culture, and more, in the digital world, creating a positively changed life and promoting sustainable, humane, and modern social development [13].

Therefore, regardless of the approach, the essence of the digital society remains the change in the way social interactions and connections transition from traditional methods to digital connections across various aspects of social life through modern technology and digital communication infrastructure.

In Vietnam, Decision No. 749/QD-TTg dated June 3, 2020, approved the National Digital Transformation Program until 2025, with a vision towards 2030, affirming the goal of "Vietnam becoming a prosperous and stable digital nation, pioneering in experimenting with new technologies and models; fundamentally renewing and comprehensively digitizing the operations of the government, business production activities, people's lifestyles and work, developing a safe, humane, and widespread digital environment" [15]. Accordingly, the pillars of the National Digital Transformation Program are "Digital Government," "Digital Economy," and "Digital Society." Therefore, building a digital society is one of the prerequisites for successfully achieving the national digital transformation objectives in Vietnam. Building a digital society aims to develop a digital infrastructure, digital life-
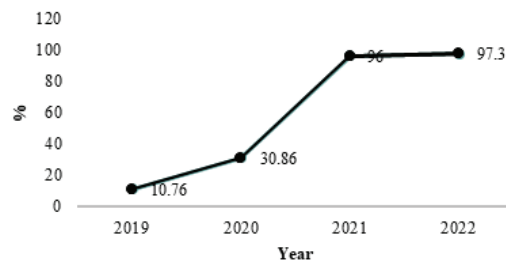
Fig. 2. Proportion of level 4 online public services out of total public services [17], [18]

style, digital commerce, digital culture, digital lifestyle, digital citizenship, etc., with a particular focus on engaging citizens in the process of national governance, collaborating with the state to build a civilized, modern, and humane digital society.

There are three essential and interrelated components that create conditions for the development of a digital society: (1) Digital citizen rights, (2) Digital lifestyle, and (3) Digital commerce.

3. Current Status of Building the Digital Society in Vietnam
3.1. Digital Citizen Rights

The Vietnamese government is making efforts to provide digital channels and create conditions for citizens to exercise their rights through modern methods in the digital environment. This includes accessing online profiles for healthcare, applying for passports or business licenses, paying taxes, and even participating in online voting during elections, aiming to enhance interactions between the government, citizens, and businesses.

The report results from the Ministry of Information and Communications in 2022 indicate an increasing trend in the number of citizens and organizations engaging in transactions on the National Data Sharing Platform (NDXP) from 2019 to 2022. Especially, in 2022, Vietnam has developed the NDXP platform connected with systems of 90 agencies, organizations, and businesses; among them are 8 databases and 12 information systems providing data sharing services. The total number of transactions carried out through NDXP in 2022 reached approximately 860 million, which is 4.8 times higher than in 2021.

In 2022, the Vietnamese government also implemented the Community Digital Technology Group. By 2022, all 63 provinces and centrally-governed cities had established Community Digital Technology Groups, with 46 out of 63 provinces completing 100% establishment of these groups at the commune level. The total number of established Community Digital Technology Groups was 68,933, with 320,839 members participating.

The proportion of online public services at level 3.4 out of the total public services showed an increasing trend from 2019 to 2021. In 2022, with the issuance of Decree No. 42/2022/ND-CP on June 24, 2022, which regulates the provision of information and online public services by state agencies on the internet, the proportion of online public services that met the conditions to be rated at level 4 reached 97.3% (accounting for 53.56% of the total administrative procedures).

In the field of population management, digital technology solutions are being applied on a big data platform to build a unique identification system for each citizen, serving as the basis for social credit scoring. Every action of individuals is recorded and can be scored, helping to identify each person's position in society. All behavioral data is observed and evaluated, creating a sense of transparency.

In Vietnam, the Ministry of Information and Communications has established the National Center for Cyber Security Monitoring. Based on digital technology application in information recognition, this center can read, receive, analyze, evaluate, and classify about 100 million pieces of information each day, creating a data foundation for early identification of information flows and social sentiments. It serves as a basis for connecting and achieving consensus between the government and the people, facilitating effective social management.

3.2. Digital Lifestyle

Digitization is changing the way people live, work, communicate, and entertain. Remote work and learning, as well as using social media platforms for communication, and experiencing virtual reality (VR) are clear manifestations of lifestyle changes through digital advancements. The digital lifestyle is enriched by Internet of Things (IoT) technology, which connects everything, enabling smart connectivity between devices and objects via the internet, such as smartphones, tablets, tracking devices, screens, and sensors for data exchange. IoT impacts people's lives mainly by providing real-time information about transportation, weather, smart city projects, etc.

Facing the powerful impact of the Fourth Industrial Revolution, the Vietnamese government has implemented synchronized solutions to build a digital lifestyle for citizens, promoting and creating favorable conditions to encourage citizen participation in the process of building a digital society.

The proportion of the population using the Internet has continuously increased in recent years. The average daily Internet usage time of Vietnamese people is about 6 hours and 23 minutes, with 55.4% of the time spent using the Internet via mobile devices.

The rate of mobile device usage has also increased significantly. In January 2023, data from GSMA Intelligence showed that there were 161.6 million mobile connections in Vietnam at the beginning of the year, equivalent to 164.0% of the total population. The number of mobile connections in Vietnam increased by 4.7 million (+3.0%) from 2022 to 2023.

The proportion of people using social media in Vietnam is quite high compared to other countries in the region. In January 2023, the number of social media users in Vietnam was about 70 million people, accounting for approximately 71.0% of the total population. On average, Vietnamese people spend 2 hours and 21 minutes per day using social media for messaging, connecting, interacting, and working.
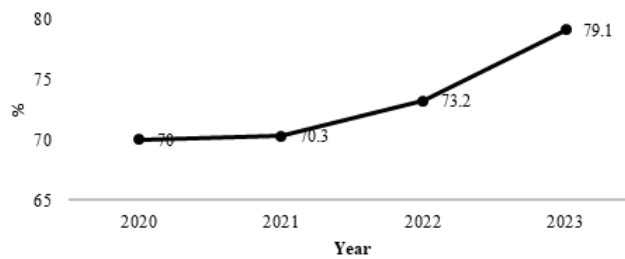
Fig. 3. Proportion of the population using the Internet in Vietnam [20]

In the field of urban traffic management, the application of Big Data and Artificial Intelligence (AI) has brought many promising results in innovation. The current Intelligent Traffic Management Center in Ho Chi Minh City, for example, utilizes digital features in management to fulfill four main functions: traffic monitoring, signal light control, traffic information provision, and violation handling. The integration and sharing of traffic surveillance camera data help functional units proactively address traffic-related issues in the city. AI application in management and operation is based on creating traffic forecasting models by collecting comprehensive traffic data, analyzing traffic behaviors, forecasting traffic events, optimizing traffic flow, and recommending suitable traffic routes. In addition to the camera network, a traffic flow measurement system has been installed at 118 locations, allowing the calculation of average traffic speed, vehicle density, and automatic alert generation. Currently, the Ho Chi Minh City Department of Transport has completed and implemented a simulation model for predicting traffic demand, contributing to directing the development of policies and management plans.

In some localities, digital technology is also being piloted in parking management, by automatically monitoring and identifying information about parked cars in experimental parking areas. The AI-based surveillance camera system helps build monitoring solutions and automatically determine information about parked cars and available parking spaces in the experimental parking areas. It also simulates the parking time calculation system and deducts parking fees from the hypothetical accounts of customers.

In the field of education, digital transformation in teaching and learning is being strongly promoted throughout the sector. The Ministry of Education and Training has issued guidelines for building digital learning materials and online courses. The digital learning resources of the entire sector contribute to the Vietnam Digital Knowledge System with more than 7,000 e-learning lectures (over 4,000 lectures for high school education programs, over 1,000 lectures on Vietnamese cultural heritage, and more than 2,000 television lectures).

In implementing Project No. 06 on developing population data applications to serve the national digital transformation, the Ministry of Education and Training has successfully connected the education database with the national population database managed by the Ministry of Public Security. As a result, more than 1.5 million teachers (reaching 95%) and nearly 21 million student records (reaching 92%) have been connected, synchronized, and authenticated with the citizen identification code. Moreover, information technology applications have been deployed in the high school graduation examination and university admission process, which are carried out online for all candidates. In pre-school and general education, nearly 24 million student records have been digitized (digitizing information about personal history, learning process, training, health, etc.), along with more than 1.5 million records of teachers, staff, and management officers (records, professional qualifications, evaluations according to standards) from 53,000 schools, and information about school facilities and toilets.

3.3. Digital Commerce

Digital commerce includes all forms of financial payments on digital technology platforms, managing online banking accounts quickly, transparently, securely, and efficiently. The World Payments Report 2015 by Capgemini highlights the importance of digital commerce in modern society, as the volume of non-cash payment transactions is growing faster than the Gross Domestic Product (GDP) on all continents. In Vietnam, as well as in many other countries, digital commerce has created new economic models and reshaped business processes in various sectors, including public services, retail, transportation, financial services, and entertainment. It allows the government and businesses to interact with citizens and customers in a dynamic and efficient manner.

In January 2020, statistics showed that 30% of people in Vietnam aged 15 and above owned an account with a financial organization, of which 4.1% had credit cards, 3.5% had accounts on mobile apps, and 21% had made online purchases or bill payments. When shopping online, 37% of users chose to pay by credit card, 17% paid in cash, 30% transferred money through banks, 11% used e-wallets, and 6% opted for other methods.

In the first six months of 2023, there were 57.62 million people who had shopped online, an increase of 11.3% compared to 2022. The total value of online transactions was estimated at 12.81 billion USD. On average, each customer spent 222 USD on online shopping, of which 49.7% of online shopping transactions were made via mobile devices.

The business activities on social media platforms have shown an increasing trend from 2019 to 2021. In 2021, 57% of businesses reported using social media platforms for online commerce.

The forms of commercial negotiation and signing commercial contracts in the digital environment have also shown an increasing trend in Vietnam in recent years, especially from 2020 to 2021.

4. Some Barriers to the Process of Building a Digital Society in Vietnam Today
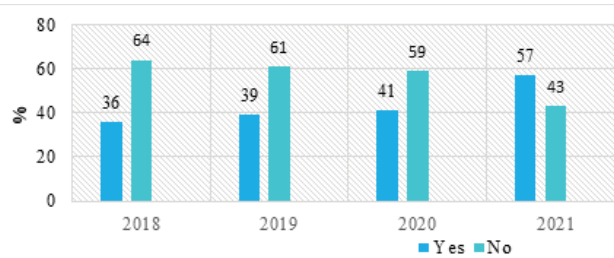
Fig. 4. Business on Social Media by Enterprises over the Years [21]

Legal Environment Barriers

Currently, Vietnam has a system of legal documents regulating and adjusting the general digital transformation process and the specific construction of a digital society. However, there are still legal gaps in terms of digital society, such as legal regulations concerning digital culture, protection of personal data in the digital environment, protection of digital citizen rights, and management of online transactions. The lack of legal foundations for managing digital society has posed difficulties for functional agencies in managing emerging issues in the digital society in Vietnam today.

Barriers to Security and Information Safety

Digital technology, while providing opportunities for human life, also presents numerous challenges to the healthy development of society. Digital technology can be used in harmful ways against individuals, communities, society, and the nation. For instance, computer viruses, spyware, loss or theft of personal data, and the spread of immoral content and violence on the internet, as well as the potential negative impact of robots on human activities, including employment, and on aspects of human life such as sexuality, love, marriage, and family. Digital technology can also be used by terrorist groups to create political instability in society.

Cyber attacks in Vietnam are increasingly complex and seriously affect national security and social order. In the third quarter of 2020, 937 websites and portals in Vietnam were hacked, their interfaces changed, files inserted, increasing by 28% compared to the same period last year [24]. In addition, the threat of data breaches and trading of personal information in the online environment is becoming more complicated. Hackers increasingly target data-focused attacks. The lack of cybersecurity experts and cloud computing security solutions, along with the explosion of smart devices, artificial intelligence, and mobile applications, poses threats to information security.

The transition to digital operations is a trend being implemented by many state agencies, private enterprises, and organizations in Vietnam to improve operational efficiency. However, in the context of the increasing storage of crucial resources and data in the digital environment, along with the explosion of connected personal devices, this has inadvertently become an exploitable "weakness." Attackers now have more "entry points" to infiltrate organizational data repositories, making information security processes more complex.

To build a safe and healthy cyberspace, which is an important resource for economic and social development, ensuring information security and safety on the internet is considered a crucial and inseparable aspect of the digital society.

Barriers to Digital Human Resources

The process of innovating national management with the goal of building a digital society in Vietnam, as well as in many countries around the world, faces difficulties related to high-quality human resources. Due to the nature of social activities taking place in the digital environment, there is a need for labor with high intellectual capacities, trained, and exposed to modern technologies. Therefore, a shortage of skilled labor, lack of leading experts in digital technology, and a lack of strategic planners for digital transformation are occurring in many countries. It is evident that the demand for digital technology human resources from government agencies, businesses, and social organizations is increasing, but the supply of trained personnel has not yet met the demand. Many enterprises and organizations have to proactively seek cooperation with universities to train and find human resources.

Barriers to Cultural and Ethical Changes in Society

In the digital society, people use machines and artificial intelligence to process vast amounts of data and arrive at the most logical results. Society is always oriented towards more accurate and complex production, always dreaming of realizing a life of automation, self-operation, maximizing time and energy savings. However, the development of digital technology, especially artificial intelligence, still faces many debates. The fact that machines can mimic intelligence and handle tasks with equal or greater efficiency than humans creates intense arguments. As a result, the digital society has and is creating rapid and profound changes in the hierarchy of cultural and social values, ethical standards, and interaction methods that have no historical precedent, and people become dependent on technological means as intermediaries... According to S.M.Omundro: "Even artificial intelligence with only the ability to play chess can be dangerous if not properly designed. Artificial intelligence designed without any special precautions can start to resist being shut down and try to infiltrate other technological systems to create a copy of itself. Improperly designed artificial intelligence can attempt to seize control of resources without considering the safety of others to achieve its design goals" [25]. This makes communication between people more "loose" and even at risk of breaking.

Additionally, human dependence on technology leads to consequences such as a tendency to narrow community commitment, people feeling "lonely," more exhausted, and stressed, even though the digital space offers more convenient, open living spaces and connections. The values of culture and ethical standards of people in the digital environment are undergoing significant changes compared to traditional cultural and ethical values. Furthermore, a portion of society, espe-
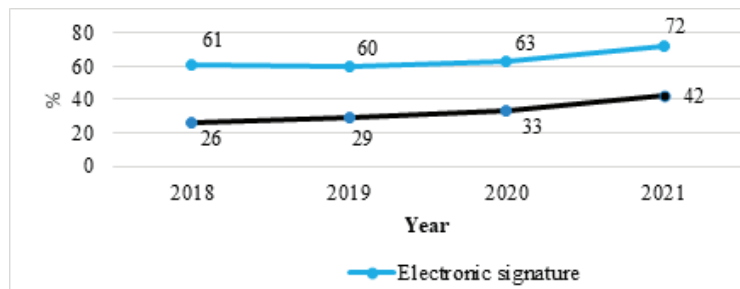
Fig. 3. Proportion of the population using the Internet in Vietnam [20]

cially young groups, tends to "idealize" many things happening in the virtual space, tend to detach, forget, or "normalize" high values of tradition, family culture, and ethnicity... This creates difficulties for managers in managing activities in the digital society.

Therefore, researching, guiding, and directing the digital society through the criteria of digital culture, digital ethics, digital life, and digital lifestyles, alongside core values of the people, is a matter that needs attention and focus.

"Digital Divide" Barriers

In addition to the increasing challenge of the rich-poor gap in the market economy, the "digital divide" will become a new social issue in the context of digital transformation. The rapid development of digital technology will inevitably give rise to layers of people who cannot keep up with the pace of development, lack the basic qualifications to adapt to innovation.

Therefore, to successfully build a digital society, which aims to enhance the effectiveness of national management in the context of digital transformation, it is essential to improve the level of intelligence and technology literacy. People need to be specifically oriented and guided so that they can grasp and adapt to a society with a rapidly advancing scientific and technological development, especially vulnerable groups in society (the elderly, the poor, people in remote areas, mountains, islands...). In other words, a digital society can only be truly successful when it is built by digital officials and public servants; a digital society can only function when there are digital citizens. The government needs to have a digital transformation strategy that goes hand in hand with assisting vulnerable groups and implements the motto "When technology advances, no one is left behind."

5. Recommendations for building a digital society to enhance the effectiveness of national governance in Vietnam

It is essential to complete the institutional framework for the digital society. The state should promptly perfect legal documents regarding the construction of a digital society, including regulations concerning digital culture, digital ethics, and digital lifestyle standards. Additionally, the state needs to urgently issue legal regulations on the protection of personal data in the digital environment and improve the legal basis for electronic commerce activities.

Regularly assess the impacts of digital technology on society to proactively minimize its negative effects. Establish behavioral rules for businesses and individuals in the digital environment. Develop centers to address concerns and support those affected by negative impacts of digital technology.

Implement a job model that aligns with the working conditions of the digital environment. Relevant authorities should manage social development activities to strike a balance between economic growth, handling labor surplus during the golden population period, social welfare policies, and the challenges of the digital transformation process.

Increase the quantity of training, development, and updating of knowledge and skills for working in the digital environment for the workforce in the state administrative system. Select and train a team of digital transformation experts for various industries, sectors, and localities. These experts should continue to train relevant officials in their organizations and become the backbone to lead, organize, and spread the national digital transformation process.

Perfect policies to build a knowledgeable digital citizenry that understands and adapts to the digital society. Support and encourage citizens to embrace the digital society, possess skills to utilize and exploit the benefits of the digital world, and practice new behaviors, culture, and principles in the digital environment. Integrate education and promotion of the digital society into the curriculum of educational institutions, and utilize digital space and technology alongside traditional teaching methods to propagate the digital transformation process.

Increase enrollment quotas for training bachelor's and engineering degrees in information technology. Adjust and supplement postgraduate, university, and vocational training programs to integrate digital technology, such as artificial intelligence (AI), data science, big data, cloud computing, Internet of Things (IoT), virtual/augmented reality (VR/AR), blockchain, and 3D printing.

Implement an integrated education model that combines science, technology, engineering, mathematics, arts, business, and English language training, as well as information technology skills and information security assurance at all levels of education. Provide career orientation training so that students acquire skills ready for the digital environment. Promote online examinations, recognize the value of online learning certificates, build platforms for sharing teaching and learning resources, and develop technology enterprises serving education with a focus on personalized training.

Expand international cooperation activities to learn from the experiences of other countries and organizations in building and managing the digital society.

Invest sufficient financial resources in the process of building and developing the digital society.

6. Conclusion

The National Digital Transformation Program identifies three pillars: "Digital Government," "Digital Economy," and

"Digital Society." Therefore, building a digital society is a pre-requisite for successfully implementing the goals of national digital transformation, aimed at enhancing the effectiveness of national governance in Vietnam.

Some achievements have been made in all three components of the digital society: digital citizenship, digital life, and digital commerce. These achievements demonstrate the efforts of the government and society in implementing and realizing policies for building a digital society, contributing to improving the effectiveness of state governance and achieving the goals of national digital transformation in Vietnam.

Besides the achievements, activities for building a digital society also encounter many barriers and challenges in various aspects: legal environment, security, information safety, digital human resources, digital divide, and changes in cultural and ethical norms in society.

To build and develop a digital society, aiming to improve the effectiveness of national governance in Vietnam, it is necessary to pay attention to implementing some recommendations, focusing on addressing issues related to management systems and human resources.

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